

FACTSHEET

Veterinary Services

United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

September 1996

Exotic Newcastle Disease

Exotic Newcastle disease is a contagious and fatal viral disease affecting all species of birds. Also known as velogenic viscerotropic Newcastle disease (VVND), exotic Newcastle is probably one of the most infectious diseases of poultry in the world. Exotic Newcastle is so virulent that many birds die without showing any clinical signs. A death rate of almost 100 percent can occur in unvaccinated poultry flocks. Exotic Newcastle can infect and cause death even in vaccinated poultry.

An outbreak of exotic Newcastle can have severe economic impacts. In 1971, a major outbreak occurred in commercial poultry flocks in southern California. The disease threatened not only the California poultry industry but the entire U.S. poultry and egg supply. In all, 1,341 infected flocks were identified, and almost 12 million birds were destroyed. Eradication efforts cost taxpayers \$56 million, severely disrupted the operations of many producers, and increased the prices of poultry and poultry products to consumers. Exotic Newcastle has not infected domestic chicken flocks in the United States since that outbreak was eradicated in 1974.

What Are the Clinical Signs?

Exotic Newcastle affects the respiratory, nervous, and digestive systems. The incubation period for the disease ranges from 2 to 15 days. An infected bird may exhibit the following signs:

- Respiratory: sneezing, gasping for air, nasal discharge, coughing
- Digestive: greenish, watery diarrhea
- Nervous: depression, muscular tremors, drooping wings, twisting of head and neck, circling, complete paralysis
- Partial to complete drop in egg production and thin-shelled eggs
- Swelling of the tissues around the eyes and in the neck
- Sudden death
- Increased death loss in a flock.

How Does Exotic Newcastle Spread?

Exotic Newcastle is spread primarily through direct contact between healthy birds and the bodily discharges of infected birds. The disease is transmitted through infected birds' droppings and secretions from the nose, mouth, and eyes. Exotic Newcastle spreads rapidly among birds kept in confinement, such as commercially raised chickens.

High concentrations of the exotic Newcastle virus are in birds' bodily discharges; therefore, the disease can be spread easily by mechanical means. Virus-bearing material can be picked up on shoes and clothing and carried from an infected flock to a healthy one. The disease is often spread by vaccination and debeaking crews, manure haulers, rendering-truck drivers, feed delivery personnel, poultry buyers, egg service people, and poultry farm owners and employees.

The exotic Newcastle virus can survive for several weeks in a warm and humid environment on birds' feathers, manure, and other materials. It can survive indefinitely in frozen material. However, the virus is destroyed rapidly by dehydration and by the ultraviolet rays in sunlight.

Smuggled pet birds, especially Amazon parrots from Latin America, pose a great risk of introducing exotic Newcastle into U.S. poultry flocks. Amazon parrots that are carriers of the disease but do not show symptoms are capable of shedding exotic Newcastle virus for more than 400 days.

How Can Poultry Producers Help Control and Prevent Exotic Newcastle?

The only way to eradicate exotic Newcastle from commercial poultry is by rapidly destroying all infected flocks and imposing strict quarantine and in-depth surveillance programs. Poultry producers should strengthen biosecurity practices to prevent the introduction of the disease to their flocks. Biosecurity is also important to protect backyard and hobby flocks. The following are tips on proper biosecurity practices:

- Permit only essential workers and vehicles on the premises.
- Provide clean clothing and disinfection facilities for employees.

- Clean and disinfect vehicles (including tires) entering and leaving the premises.
- Avoid visiting other poultry operations.
- Maintain an “all-in–all-out” philosophy of flock management with a single age flock.
 - Control the movement of all poultry and poultry products from farm to farm.
 - Do not “skim” mature birds from a flock for sale to a live-poultry market.
 - Clean and disinfect poultry houses between each lot of birds.
- Do not keep pet birds on the farm. Do not hire employees who own pet birds.
- Exclude vaccination crews, catching crews, and other service personnel who may have been in contact with other poultry operations within 24 hours.
- Protect flocks from wild birds that may try to nest in poultry houses or feed with domesticated birds.
- Control movements associated with the disposal and handling of bird carcasses, litter, and manure.
- Take diseased birds to a diagnostic laboratory for examination. Keep dead birds in a refrigerator and ship them on wet ice to a diagnostic laboratory for virus isolation.

How Can Pet Bird Enthusiasts Help Control and Prevent Exotic Newcastle?

Exotic Newcastle is also a threat to the caged-bird industry. Birds illegally smuggled into the United States are not quarantined and tested by the U.S. Department of Agriculture (USDA) and therefore may carry the exotic Newcastle virus. Owners of pet birds should

- Request certification from suppliers that birds are legally imported or are of U.S. stock, are healthy prior to shipment, and will be transported in new or thoroughly disinfected containers.
- Maintain records of all sales and shipments of flocks.
- Isolate all newly purchased birds for at least 30 days. Restrict movement of personnel between new and old birds.

Amazon parrots are difficult to raise domestically. Anyone who is offering to sell a large number of young parrots should be suspected of smuggling or purchasing smuggled birds.

What Is APHIS’ Role?

To prevent exotic Newcastle from being introduced into U.S. poultry flocks, USDA’s Animal and Plant Health Inspection Service (APHIS) requires that all imported birds (poultry, pet birds, birds exhibited at zoos, and ratites) be tested and quarantined for diseases before entering the country.

In addition to international import restrictions, APHIS has increased surveillance efforts to detect exotic Newcastle if it is accidentally introduced into the United States. More than 250 APHIS and State veterinarians trained to diagnose foreign animal diseases regularly conduct field investigations of suspicious disease conditions. This surveillance is enhanced by efforts from university personnel, State animal health officials, USDA-accredited veterinarians, and industry representatives.

If exotic Newcastle were detected in domestic poultry or pet birds, APHIS would work quickly with its State and industry counterparts to implement aggressive measures, including quarantine, control, and cleanup, to prevent opportunities for the disease to spread.

The following are approved disinfectants for vehicles, premises, rubber boots, gloves, raincoats, and goggles:

- One-stroke Environ: one-half ounce to 1 gallon of water.
- Sodium orthophenyl-phenate: 1 pound to 12 gallons of water at 15.6 °C (60 °F) in warm weather. In cold weather, the solution must be heated to at least 49 °C (120 °F) before application.
- Cresylic disinfectant: 4 ounces to 1 gallon of water.
- Thermal heat: This is used to destroy viruses in poultry products. The temperature must remain constant for the duration of time indicated.
 - At least 69 °C (156 °F) for 30 minutes or more.
 - At least 80.5 °C (167 °F) for 3 minutes.

Report Suspicious Cases

Any poultry or pet bird owners or veterinarians who suspect a bird may have exotic Newcastle should immediately contact State or Federal animal health authorities.

For more information, contact
 USDA, APHIS, Veterinary Services
 Emergency Programs
 4700 River Road, Unit 41
 Riverdale, MD 20737–1231
 Telephone (301) 734–8073
 Fax (301) 734–7817